JUNE 2015

SAFETY IN NUMBERS

The Changing Face of Traffic Safety

1885
Seat belts patented (U.S. Patent 312,085)

1951
Air bags developed

1953
Motorcycle helmets developed

1962
Child safety seats invented

THE RESULT
In 2013 alone, 16,865 lives were saved by seat belts, frontal air bags, motorcycle helmets, and child restraints.

In 1966, the year that NHTSA was established as the National Highway Safety Bureau (becoming the National Highway Traffic Safety Administration in 1970), 50,894 people died in motor vehicle crashes. In 2013, the Nation lost 32,719 lives – still a huge loss, but an improvement considering that there were more licensed drivers (212 million) in 2013 than the entire U.S. population in 1966 (197 million). Since motor vehicle crashes are preventable, even one life lost is too many.

Efforts to improve highway safety evolved alongside the development and evolution of the vehicles themselves. As safety issues arise, vehicle safety countermeasures are developed as well as highway safety countermeasures. These combined efforts combat the vehicle and roadway issues, as State, Federal, and advocacy partners work together to change driver behavior. This evolution has saved thousands of lives every year.

Seat belts, for example, were patented in 1885, first offered in American-made cars in 1949, and were required by law in all seating positions of vehicles in 1968. The first State law requiring belt use was passed in 1984, when few drivers (15%) wore their seat belts. In the latest survey, 87 percent of front seat occupants buckle up every day. In 2013 alone, the use of seat belts saved 12,584 lives. In the past 5 years, the use of seat belts in passenger vehicles saved over 62,000 lives.

Vehicles will continue to evolve – with vehicle-to-vehicle communication on the horizon and automated safety features already in place in many current model vehicles. NHTSA and its partners in the highway safety community will continue to strive to meet the safety needs of the driving public.

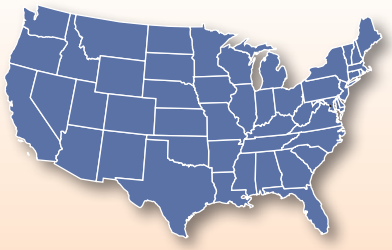
For more information, visit:

www.NHTSA.gov

U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA
www.nhtsa.gov

THE FACTS



Current State Laws

Each of the 50 States and DC set their own traffic safety laws to regulate vehicles and drivers on their State roadways. When a State implements a law, it sends a powerful message to drivers that this is an important public safety issue and there are certain standards that drivers must meet if they want to keep their driving privileges. The following are examples of State law safety issues.

- Aggressive Driving
- Child Passenger Safety
- Distracted Driving
- Drug-Impaired Driving
- Impaired Driving
- Graduated Driver Licensing
- Motorcycle and Bicycle Helmets
- Older Drivers
- Seat Belts
- Sobriety Checkpoints
- Speed Limits
- Speed and Red Light Cameras
- Work Zones

Evolution of a Safety Agency

- **1966** – Congress creates the United States Department of Transportation whose mission is to, "Serve the United States by ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future."
- **1970** – NHTSA is officially established by the Highway Safety Act. NHTSA is responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes. This is accomplished by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and through grants to State and local governments to enable them to conduct effective local highway safety programs.
- In addition, NHTSA investigates safety defects in motor vehicles, sets and enforces fuel economy standards, helps States and local communities reduce the threat of drunk drivers, promotes the use of safety belts and child safety seats, investigates odometer fraud, establishes and enforces vehicle anti-theft regulations and provides consumer information on motor vehicle safety topics.

Outstanding FIRSTS in Vehicle Safety LAWS

1901 Connecticut creates the first statewide traffic laws. The new laws regulate motor vehicle travel speeds, limiting their speed to 12 mph in cities and 15 mph on country roads.

1910 New York introduces the first drunk driving laws, penalizing drivers for operating vehicles while under the influence of alcohol.

1978 The first child passenger safety law is enacted in Tennessee, requiring parents to place their young children in an approved child restraint system.

1984 New York passes the first U.S. law requiring seat belt use in passenger cars.

1998 All 50 States and DC have zero-tolerance laws for drivers under 21 years old. These laws prohibit youths from driving with any alcohol in their system.

2007 Washington was the first State to pass a ban on texting and driving.

In 1977, NHTSA created the "Star of Life." Prior to its creation, there was no uniform symbol that represented Emergency Medical Services (EMS). Today, the Star of Life identifies emergency medical services not just in this country but across the globe. This symbol can be found on ambulances, emergency medical equipment, patches, and apparel worn by EMS providers. It can also be found on road maps and highway signs indicating the location of or access to qualified emergency medical care. In addition to the creation of this symbol, NHTSA develops training programs for emergency medical technicians and other first responders.

THE FACTS

5-Star Safety Ratings
More Stars. Safer Cars.

Video of the First Frontal Impact Crash Testing
(www.youtube.com/watch?v=bW_1UNuU8lg&feature=player_embedded)

The first consumer information program on vehicle safety was established in 1978, and based on a 35 mph frontal crash test. Today NHTSA's consumer information program is the 5-Star Safety Ratings program (SaferCar.gov) and contains easily accessible information about crash avoidance technologies, rollover safety, and crash testing for vehicles. The program provides consumers with information about the safety of a new vehicle beyond what is required by Federal law.

In 1969, Dr. William Haddon, then director of the National Highway Safety Bureau, introduced the Haddon Matrix, which applies a public health model to the "epidemic" of traffic-related injury. The matrix illustrates the various stages of a crash and factors that contribute to the crash, thus highlighting the importance of safety from the elimination of physical impairment of the driver to the crashworthiness of the vehicle to the emergency medical response.

Haddon Matrix with examples of safety efforts:

	Pre-Crash	Crash	Post-Crash
Human Factors	• Education and licensing • Driver impairment • Crash avoidance maneuvers (braking, turning, etc.)	• Health at time of crash • Sitting properly in restraint • Impairment	• Response to EMS • Severity of injury • Type of injury
Vehicle/ Equipment Factors	• Crash avoidance equipment and technology (lights, tires, collision avoidance, etc.) • Vehicle design • Vehicle load	• Speed of travel • Functioning of safety equipment (seat belts, air bags, child restraints) • Energy absorption of vehicle	• Ease of extraction from vehicle • Integrity of fuel systems and battery systems
Physical Environment	• Road hazards • Distractions • Weather conditions	• Roadside features • Guardrails • Type and size of object struck	• Distance of EMS personnel • Notification of EMS personnel • Accessibility to crash victims
Social/ Economic	• Enforcement activities • Insurance incentives • Social norming • Ability to use safety equipment appropriately	• Laws concerning use of safety equipment	• Trauma system equipment, personnel, training • Information sharing

Electronic Stability Control

NHTSA established a Federal Motor Vehicle Safety Standard (FMVSS) to require electronic stability control (ESC) on passenger cars, multipurpose vehicles, trucks, and buses weighing 10,000 lbs. or less in an effort to reduce rollover crashes. NHTSA estimates ESC could save up to 9,600 lives each year once all light vehicles are equipped with ESC. ESC was first introduced on vehicles in 1995. After thorough evaluation, the FMVSS requiring ESC was finalized in 2007 with a phase-in of ESC on light vehicles and requirement that all 2012 model year vehicles and newer must be equipped with ESC. NHTSA added ESC as a recommended safety technology in 2008 in the 5-Star Government Safety Ratings Program to encourage automakers to manufacture vehicles with ESC, educate consumers about the benefits of ESC, and emphasize the importance of the equipment on vehicles during the phase-in period.

This photograph shows the testing procedure for ESC.

WHAT YOU CAN DO

As automotive safety and highway safety continue to evolve, here are ways everyone can take part in continuing the safety movement:

- Consumers can download NHTSA's SaferCar mobile app. In 2013, NHTSA launched the app to provide real-time vehicle safety information to consumers (iPhone App | Android App).
- Everyone should research the crashworthiness of vehicles and crash avoidance features of vehicles before you buy. In 2010, NHTSA released an enhanced 5-Star Safety Rating Program with more stringent crash tests, new crash tests, more advanced crash test dummies, and crash avoidance technologies.
- All drivers can familiarize themselves with guidelines for safe driving practices that evolve as we learn more. In 2011, NHTSA updated its Child Passenger Safety recommendations to keep pace with new research and the latest technology.
- Drivers and passengers are advised to be aware of driving laws in another State before you drive there, because some laws change from State to State. For example, as of May 2015, 14 States and DC prohibit hand-held cell phone use, 38 States and DC ban all cell phone use by novice drivers, and 46 States and DC ban texting while driving (Distracted Driving Laws).
- Vehicle owners should be knowledgeable about the safety technologies in their cars, how they work, when they work, and understand the warnings on the dashboard. You can find information about your car's features in the owner's manual or on the Monroney Label of a new car, located on the door. In 1958, the Automobile Information Disclosure Act required all new vehicles be affixed with a Monroney Label. This label must include all standard equipment and optional equipment on that vehicle, as well as star ratings (among other required information).

- NHTSA continues to reach out to consumers with public campaigns reminding them of safe driving practices. In 2013, NHTSA began a new campaign titled "Everyone Is a Pedestrian" to increase awareness of the issue of pedestrian fatalities and to provide resources to combat the issue.
- Law enforcement keeps the pressure on unsafe drivers through high-visibility enforcement campaigns to deter risky behavior. In 2003, the *Click It or Ticket* campaign went national, working to increase seat belt use in all 50 States.
- The motor vehicle industry and NHTSA conduct research into new technologies as they are developed. NHTSA has a responsibility to understand the operation of technologies and the potential safety benefit if those safety technologies were more pervasive. In 2014, NHTSA announced it will take steps to enable vehicle-to-vehicle communication for light vehicles. The technology will improve safety by allowing vehicles to "talk" to each other and ultimately avoid many crashes altogether by exchanging basic safety data such as speed and position 10 times per second.

Lives Saved by Restraint Use, and 21-Year-Old-Minimum-Drinking-Age Laws, and Additional Lives That Would Have Been Saved at 100-Percent Seat Belt and Motorcycle Helment Use, 2009-2013

Year	Lives Saved, Age 4 & Younger	Lives Saved, Age 5 & Older	Lives Saved, Age 13 & Older	Lives Saved, All Ages	Lives Saved	Additional Lives That Would Have Been Saved at 100-Percent Use	
	Child Restraints	Seat Belts	Frontal Air Bags	Motorcycle Helmets	Minimum Drinking Age Laws	Seat Belts	Motorcycle Helmets
2009	307	12,757	2,481	1,486	636	3,690	733
2010	303	12,670	2,403	1,551	560	3,356	711
2011	262	12,071	2,341	1,622	543	3,396	707
2012	285	12,386	2,422	1,715	537	3,051	782
2013	263	12,584	2,388	1,630	504	2,800	715

Source: 2009-2012 FARS Final Files and FARS 2013 Annual Report File

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For more information, visit:
www.NHTSA.gov

NHTSA
www.nhtsa.gov
www.nhtsa.gov
1200 New Jersey Avenue SE.
Washington, DC 20590
1-888-327-4236